

ON GRAPHS ASSOCIATED WITH CHARACTER DEGREES OF FINITE GROUPS

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ABSTRACT. In this talk G will be a finite group. The set of irreducible characters of G , denoted by $Irr(G)$, is an important tool for studying G . For the group G , we have the following set of integers which is called the set of irreducible character degrees of G :

$$cd(G) = \{\chi(1) : \chi \in Irr(G)\}$$

This is a finite set of positive integers which includes 1. In this field of study, there are two main questions that arise:

- (i) Which sets of positive integers can occur as $cd(G)$ for some group G ?
- (ii) If there is some set of integers X so that $X = cd(G)$ for a group G , what can be said about the structure of G ?

According to the above questions, we will attach several graphs to $cd(G)$. Again the questions that arise are:

- (i) Which graphs can occur in these situations?
- (ii) If some graph does occur, what can be said about the associated groups?

In this talk, we will give some results related to the above questions.

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